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Editor, Science  
1515 Massachusetts Avenue NW  
Washington, D.C. 20005

Dear Sir:

With respect to the anomalous cloud phenomenon off Japan on 9 April 1984<sup>1</sup>, we wish to submit preliminary results of our research and experiments that strongly support the "man-made explosion" hypothesis.

Consideration of the enclosed paper as a research article or an extended Letter is requested.

We briefly describe the practical extension of electromagnetics into the zero force-field area, taking the Bohm-Aharonov effect to its logical macroscopic conclusion. By using zero-summed electromagnetic force fields, we have created zero-vector resultant, artificial scalar potentials, waves of which can be beamed and intersected to provide a new kind of interferometry. In this manner, energy can be produced at, or extracted from, a distant region, without passing through the intervening space between transmitters and target in the normal electromagnetic wave sense. The weapon implications, of course, are obvious.

Substantial documentation and numerous incidents are provided to support the hypothesis that the Soviet Union has extensively developed scalar electromagnetic weapons and tested them worldwide for the last several decades.

Because of the urgent implications of our work, it is essential that the results be placed before the scientific community at large and replicated or refuted. We also request unusual openmindedness and your ablest reviewers and referees.

Your earliest attention would be deeply appreciated.

<sup>1</sup>Walker et al, Science,  
227(4687), 8 Feb. 1985.

Respectfully yours,

*T. E. Bearden*

T. E. Bearden

Ramon Sanchez



## Possible Implications of the Mystery Cloud of 9 April 1984

If the mysterious expanding-cloud phenomenon pointed out by Walker et al<sup>1</sup> was a manmade explosion, then it may be of great portent to the future security of the Western world. We wish to propose a specific mechanism whereby the phenomenon could have been an artificially induced explosion, and mention other possibly related incidents and evidential experiments that may support the man-made explosion hypothesis.

First, the implications of a dynamic zero-vector electromagnetic (EM) force field in vacuum have not been pursued in the literature. It is elementary that a zero EM force vector can be the summed resultant of an extensive system of non-zero EM force vectors, some or all of which may be time-varying. The resultant zero-force-field vector system must not be interpreted as representing the absence of all force vectors, nor must it be considered to be devoid of all electromagnetic energy, even though its envelope field presents no electromagnetic energy to a conventional detector.

For example, consider a deliberately created system of electric fields  $\vec{E}_i$  which sum to electric field resultant  $\vec{E}_t$ , such that

$$\vec{E}_t = \sum_{i=1}^n \vec{E}_i = \vec{0} \quad (1)$$

Define the magnitude of an artificial scalar potential  $\phi_a$  as

$$|\phi_a| = \sum_{i=1}^n |\vec{E}_i| \quad (2)$$



Ignore the magnetic field for the moment.

It can be seen that the  $\bar{E}_i$ , or a portion of them, can be time-varying and still allow the system to fulfill the zero-summation condition. Take the simplest ideal case, where all  $\bar{E}_i$  vary sinusoidally with time, at a single frequency, by the same fraction, and perfectly in phase. In that case, always

$$\bar{E}_t = \bar{0} \quad (3)$$

yet, if the  $\bar{E}_i$  are components of electromagnetic waves moving in the x direction, then

$$\phi_a(x,t) = A \sin\left(\frac{2\pi x}{\lambda} \mp \omega t\right) \quad (4)$$

where  $A(x,t)$  represents the amplitude of the wave,  $\lambda$  its wavelength, and  $\omega/2\pi$  is its frequency.

Precisely similar equations apply to zero-summation of B-field components to form an artificial magnetostatic scalar potential. By combining both artificial electrostatic and magnetostatic fields, it can be shown that an overall pure artificial potential wave  $\bar{\Phi}(x,t)$  can be constructed from ordinary electromagnetic waves.

For simplicity, we will discuss primarily the electric field aspects; it is understood that the related magnetic aspects are similar.

Equation (4) defines a wave of pure artificial potential as a function of time and distance. Since a set of locked-in forces that sum to zero is technically a stress, the new potential wave is a wave



of pure stress in vacuum spacetime. It is also longitudinal since, to the external observer, it appears to be a wave of the compression (increase) and rarefaction (decrease) of the stress of spacetime itself; a 4-space analogy of the sound wave in 3-space. Call this new wave a "scalar wave," since it will seem to have a zero gradient to an ordinary point detector.<sup>2</sup>

Each component  $\bar{E}_i$ , considered alone, has "electromagnetic energy" and is the  $\bar{E}$ -field of a normal transverse electromagnetic wave in the conventional sense. Yet the overall scalar wave does not appear to possess an "envelope"  $\bar{E}$ - $\bar{H}$  energy and is not a transverse wave.

This is the peculiar scalar electromagnetic wave apparently discovered by Nikola Tesla shortly before 1900.<sup>3</sup>

Note that one can enfold (Bohm's term) and conceal as much EM energy in this new wave as desired. Yet ordinary point measurement/detection devices will show the presence of no EM energy whatsoever, since they will detect zero  $\bar{E}$  and  $\bar{B}$  fields (the zero-vector resultants of the system).<sup>4</sup>

In the scalar wave the enfolded electromagnetic energy is in a new form; it is locked inside a zero-vector system, and to the external observer it appears as "stress of vacuum," or "stress of spacetime." Call this "locked-in" energy, in a zero-vector system, by the name anenergy.<sup>5</sup>

Now let  $K$  represent "kinetic" or "moving" wave energy in the electromagnetic sense. Let  $K_i$  represent the kinetic energy of the  $\bar{E}_i$ th wave, and  $K_t$  represent the total detectable kinetic energy in the scalar wave.



Then, to normal electromagnetic instruments, if the  $K_i$ th wave were separated,

$$K_i \neq 0, [A_i \neq 0] \quad (5)$$

yet, since it is not separated, only the envelope resultant will be detected and measured, so

$$K_t = 0, [A_i \neq 0] \quad (6)$$

where

$$\sum_{i=1}^n \bar{E}_i = \bar{0} \quad (7)$$

Now define  $K_a$  as the anenergy, or magnitude of the "locked-in" energy in spatiotemporal stress form. Then

$$K_a \neq 0 \quad (8)$$

even though

$$K_t = 0 \quad (9)$$

Now take

$$K_a = \sum_{i=1}^n |K_i| \quad (10)$$



as the technical definition of the anenergy  $K_a$ , contained in the artificial potential of the zero-vector system. Note that  $K_a$  is in addition to the ordinary anenergy content of the local vacuum.

We note in passing that the concept of energy, being rigorously related to the concept of work, is ultimately related to the idea of a single non-zero force gradient vector and to the idea of eventual expenditure of a single force against a resisting mass, since work is tied to such a single force vector by the two equations

$$\vec{F} = \frac{d}{dt} (m \vec{v}) \quad (11)$$

and

$$dw = \vec{F} \cdot d\vec{s} \quad (12)$$

On the other hand, anenergy is specifically related to a multiple simultaneous set of force gradients that sum to a zero-vector resultant. Since the resultant produces zero external work by equation (12), technically the system violates the work criterion for energy. That is, unless it changes its form, it can do no work. The scalar wave system produces zero externally observable work in a linear system; however, each component in its substructure can still produce non-zero virtual work upon the "virtual particle flux" (charge) of vacuum, hence on spacetime. Accordingly it can produce relativistic effects upon mass, inertia, and the rate of flow of time.<sup>6</sup>

Further, anenergy need not be directly related to an observable



mass, since it refers to dynamic virtual work on spacetime rather than on observable mass itself.

Note that, by adjusting the zero reference potentials of the component  $\bar{E}_i$  waves used to compose the scalar wave, the wave can be at any reference potential stress level in the vacuum desired. In that sense, then,  $K_a$  can actually be either positive or negative with respect to  $K_s$ , the stress of the ambient vacuum. This fact will be utilized shortly.

It is of course straightforward to make a standing scalar wave. In a local region, a standing scalar wave represents an additional accumulation of anenergy. In other words, the addition of  $K_a$  to the anenergy of the local vacuum represents an amount of  $(K_s + K_a)$  now existing in that local region of spacetime.

Thus, surrounding and encompassing that region, there now exists a stable, locally curved spacetime, since

$$|K_s| + |K_a| > |K_s| \quad (13)$$

Such a local region now becomes general relativistic in nature. Ergo, ordinary "conservation of energy" need not locally apply, even though it still applies when the entire surrounding universe is included. We shall apply this general relativistic principle shortly.

The Bohm-Aharonov effect shows that the interference of two potentials can result in real effects on physical systems, even when the electrical and magnetic force fields  $E$  and  $H$  are zero.<sup>7</sup> This is true also for scalar wave interference, since by scalar



interferometry we refer to the interference at a distance of waves or beams of artificial potential. In the interference zone, deltas of artificial potential represent ordinary electromagnetic fields, and hence ordinary electromagnetic energy. Since the magnitude of a potential in vacuum is non-zero for every finite radial distance from the source, then the Bohm-Aharonov effect in theory admits action-at-a-distance effects if only conventional electromagnetic force fields are considered to be the carriers of electromagnetic causes.

Indeed, a macroscopic Bohm-Aharonov effect can readily be achieved at a distance, by forming narrow beams of scalar waves and intersecting them in a distant crossing region. In the distant interference zone, dephasing and decoupling of the scalar waves' component vector waves occurs by destructive interference. In zone, this provides the precise reverse of the normal EM wave interference phenomenon. In other words, with intersecting scalar wave beams, one is putting in the zero-vector "absence of 'resultant gradient wave' energy" condition, and interference dephasing produces the non-zero EM force (gradient) vectors and their concomitant vector wave energy zones in between the zero vector lines.

Another interesting phenomenon is also possible. If the potential of the scalar interferometer transmitters is higher than that of the ambient potential of the vacuum in the distant intersection region, then ordinary electromagnetic energy fed into the transmitters re-emerges in the distant zone. This is an exothermic phenomenon with respect to the distant intersection zone, and endothermic with respect to the transmitters. On the other hand,



if the potential of the transmitters is lowered below that of the distant intersection zone, then electromagnetic energy is extracted from the distant zone, emerging back at the transmitters. This is an endothermic phenomenon with respect to the distant intersection zone, and exothermic with respect to the transmitters.

We have called such a scalar interferometer a hyperspatial howitzer, since the scalar waves it produces are oscillating curvatures of spacetime, and at least one additional dimension is thereby impressed upon Minkowskian 4-space.

Both modes of the scalar interferometer -- the distant "energy production" mode and the distant "energy extraction" mode -- have been successfully demonstrated in 1984 in proprietary experiments by one of the authors (Sanchez).

Note that if the scalar howitzer is strongly pulsed, and timed so that its powerful pulses meet at a distance, then in one mode a distant exothermic (hot) explosion is generated, and in the other mode a distant endothermic (cold) explosion is generated. In the hot explosion, an associated flash of electromagnetic energy occurs at the intersection site. In the cold explosion, no flash occurs at the extraction site. However, the extracted energy is received back at the transmitters, and it must be absorbed and exhausted to prevent destruction of the howitzer transmitters themselves.

Such a howitzer can be utilized in a continuous, pulsed, or "limited time on" manner, whether in the endothermic or exothermic mode. Thus in its distant target zone it can conceivably produce continuous endothermic or exothermic effects, explosive endothermic or exothermic effects, or "steady growth" endothermic or exothermic



effects.

By interfering transmitted 3-dimensional geometric forms consisting of Fourier expansions composed of multiple simultaneous scalar wave frequencies, the distant interference zone can be patterned to consist of a specific 3-dimensional shape such as a spherical shell, a hemispherical shell, etc. This controlled shape of distant electromagnetic energy emergence or extraction may appear explosively, steadily and fixed in size, or steadily and varying in size, depending upon how the howitzer transmitters are initiated and controlled. Controlled shapes of energy have been produced by such scalar Fourier expansion means in proprietary experiments by one of the authors (Sanchez).

The mystery cloud of April 9 could have been the test of a large scalar howitzer, utilizing distant interference of scalar wave Fourier expansion forms to produce a ball of energy extraction.<sup>7</sup> This interference could have been suddenly initiated and steadily increased to giant size, simply by proper control of the howitzer. Instant freezing of water vapor in the air and of water sucked from the ocean (assuming a low blast) by the sudden low pressure volume would account for the "dense cloud ball" appearance. There would have been no flash or massive blast wave. For a given howitzer power (energy extraction rate), as the projected form increased in size, the opaqueness of the gray ice cloud of water and ice particulates would have decreased due to the decreasing energy extraction density in the expanding shell. When sufficiently large and translucent, stars could have been seen through it. This is consistent with reported observation.<sup>8</sup> No direct seismic or underwater acoustic



event would have been associated with the extraction phenomenon. Again, this is consistent with the conclusions of Walker et al.

Numerous other well-substantiated scalar howitzer incidents have occurred recently and through the years to indicate that the Soviet Union has developed and repeatedly tested scalar electromagnetic weapons.<sup>9</sup> A few of these incidents and some related phenomena will now be briefly noted.

(1) The peculiar "nuclear flashes" seen by the Vela satellites in September 1979 and December 1980 could have been due to testing of such a scalar howitzer in the pulsed exothermic mode.<sup>10</sup> Even in the vacuum of space, such an explosive eruption of energy from within spacetime vacuum itself may be expected to lift matter from the Dirac sea, producing a plasma.<sup>11</sup> Prompt absorption and re-radiation of energy from this sudden plasma may be expected to present nearly the same "double peak" profile as does a nuclear explosion.<sup>12</sup> This indeed was the profile presented by the flashes.<sup>13</sup> Note that the second Vela detection was apparently of an explosion primarily in the infrared, almost certainly ruling out a conventional nuclear event.

(2) From Afghanistan in September 1979, British war cameraman Nick Downie observed gigantic, expanding spheres of light deep within the Soviet Union, toward the direction of Saryshagan missile test range.<sup>14</sup> Saryshagan apparently contains at least one directed energy or particle beam installation which could possibly function as a scalar interferometer/hyperspatial howitzer.<sup>15</sup> Downie observed multiple incidents in the direction of Saryshagan during the actual month that the first anomalous flash was detected by U.S. Vela satellites. Taken together, the Vela and Downie incidents suggest



that a scalar howitzer may be located at the Saryshagan test range.

(3) From the air near Teheran, Iran, several airline pilots sighted a similar bright sphere of light that appeared deep within the Soviet Union on June 17, 1966.<sup>16</sup> The intensely glowing sphere expanded to enormous size, dimming as it expanded, but always sitting on the horizon. The pilots observed the phenomenon for 4 to 5 minutes. Hal Crawford's artist's concept of this incident is shown in Figure 1.

(4) On Sep. 10, 1976 a British airline crew over Lithuania observed an intensely glowing, stationary ball of light above the clouds underneath the plane.<sup>17</sup> When alerted by the airline pilot, Soviet authorities on the ground curtly informed him to pay no attention and, effectively, to exit the area. This Soviet reaction indicates that this incident may have been a Soviet test of an unknown type of device. If so, the interferometer intersection zone could have been deliberately placed near the aircraft to stimulate the crew and passengers, and later to ascertain by the British government's reaction whether or not Britain was cognizant of scalar electromagnetics.

(5) Other multiple sightings of expanding, brilliant spheres and hemispheres of light reaching truly giant size have occurred.<sup>18</sup> These sightings are consistent with the scalar electromagnetic weapons testing hypothesis.

(6) Khrushchev announced the existence in Soviet research and development of a "fantastic weapon" as early as 1960.<sup>19</sup> Khrushchev is also reported to have stated that the weapon could destroy all life on earth if unrestrainedly used.



(7) In 1975, Brezhnev introduced the surprise proposal that we should also consider prohibiting the development of new, powerful weapons of mass destruction "more frightful than atomic weapons."<sup>20</sup> Brezhnev and other Soviet leaders repeated the proposal on several subsequent occasions during the same year.<sup>21</sup>

(8) Tentative evidence exists of Soviet engineering of North American weather by means of scalar electromagnetics.<sup>22</sup> Using the communications band (3-30 MHz), for example, ordinary electromagnetic carrier beams can bend around the earth and intersect over the United States. This is precisely the intersection pattern evidenced by the powerful Woodpecker radars.<sup>23</sup> Scalar components modulated upon these carriers would elude detection by normal U.S. and Canadian instruments, regardless of how much enfolded energy the scalar components carried as spatiotemporal stress. An intersection "grid" of these clandestine scalar waves could exist as a substructure on the ordinary electromagnetic grid of interfering Woodpecker carrier waves that exists over the U.S.

Controlled scalar Fourier expansions and scalar interference within the grid pattern could be accomplished as desired. By using interference of the scalar components to establish deliberate high pressure (exothermic mode) zones and low pressure (endothermic mode) zones in the Woodpecker grid and slowly orienting the grid dynamically by transmitter beam rotation, jet streams and cloud patterns over the U.S. could be significantly influenced and controlled from distant Soviet transmitters.<sup>24</sup>

Of course, synchronized phaselocking and timing of multiple carriers would be required. In fact, Beck has observed multiple



Woodpecker carrier frequencies to carry phase-locked 10 Hz ELF modulations, demonstrating just such coordinated usage of multiple transmitters.<sup>25</sup> Proprietary scalar detectors to detect and measure the scalar Woodpecker weather modification signals have been constructed by Golden and measurements reported.<sup>26</sup> Golden plans an exposition of his equipment, techniques, and results in the near future. Some of the specific, recognizable cloud patterns suspected to result from Soviet weather war have been detailed by one of the authors (Bearden).<sup>27</sup> Such patterns have been widely observed across the U.S., and several of them have been photographed.<sup>28</sup> Photographs of a decaying "giant radial" are shown in figures 2 and 3.

(9) A series of anomalous high altitude booms occurred off the East coast of the U.S. around the end of the year in 1977-78.<sup>29</sup> Flashes associated with some of the booms were observed. These explosions could have represented the artilleryman's standard "high burst registration" of a scalar howitzer.<sup>30</sup>

(10) Anomalous microwave radiation of the U.S. Embassy in Moscow has repeatedly occurred since about 1959-60.<sup>31</sup> Note that this radiation began about the time of Khrushchev's 1960 statement that fantastic Soviet weapons were in development. Twin beams have been noted in the radiation, suggesting interferometry. Again, scalar components on the carriers -- even modulated on microwave noise -- would not be detected by normal instruments, although the weak carrier signals would. Further, the strengths of the scalar modulations can be essentially independent of the carrier strengths. Apparently a wide variety of physical effects were experienced by personnel in the embassy, including several by several U.S.



Ambassadors.<sup>32</sup> Note that extensive tests of the electromagnetic transmission of cellular disease patterns between cell cultures have been reported by Soviet researchers.<sup>33</sup> The "Moscow radiation" could have represented an intelligence probe for all these years: radiating a high-level U.S. target -- the U. S. Ambassador -- would insure involvement of high U.S. governmental agencies and officials, including the CIA, DIA, NSA, and the president. Eventually the U.S. scientific community would also be asked to evaluate the signals. The response of the U.S. government and the counteractions taken at the U.S. Embassy in Moscow would reveal whether or not the U.S. is aware of scalar electromagnetics and scalar interferometry, with high confidence. Since apparently no U.S. scalar electromagnetic countermeasures have been taken, the Soviets have long been assured that the U.S. knows nothing of scalar electromagnetics, has not developed scalar weapons clandestinely, and possesses no defenses against the surprise use of scalar weapons against its forces and installations. The potential for a scalar electromagnetic Pearl Harbor is obvious.

(11) On July 20, 1982, Soviet official Lysenko of the Soviet Embassy in Washington, D.C. stated publicly that, should nuclear disarmament fail, the Soviets would quickly introduce new weapons more powerful than nuclear arms, and these weapons would not be verifiable.<sup>34</sup>

(11) A recent incident of a U.S. Navy-dispensed chaff cloud drifting toward San Diego, California from off-coast was associated with significant failures of electrical systems and components in the city.<sup>35</sup> Power was disrupted to as many as 60,000 homes by the



incident. A sudden, unpredicted wind was involved -- suggestive of a wind blowing toward an artificially created low pressure area. Under certain conditions, a specialized structure such as that of a piece of sophisticated chaff will reflect scalar waves of frequencies within its cut bandwidth. If scalar modulation frequencies within the chaff bandwidth were present on the Woodpecker carrier grid above and surrounding San Diego, a myriad of reflecting bits of chaff in the moving chaff cloud would produce myriads of random, invisible "fireflies" of electromagnetic energy kindling at a distance, from randomized scalar interferometry, in a zone surrounding the cloud. As these "firefly" pulses of EM energy occurred inside components of the electrical systems in San Diego and vicinity, extensive and randomized internal electrical interference would occur, leading to anomalous electrical failures. The scalar reflection effect has also been demonstrated in proprietary experiments by one of the authors (Sanchez).

(13) A candidate Soviet exhaust site exists for the extreme amounts of energy that would be extracted in endothermic mode tests by one or more large "cold explosion" weapons. From Bennett Island, 350 miles from the Soviet mainland and near the Arctic Circle, giant explosive exhausts have been repeatedly photographed by U.S. weather satellites.<sup>36</sup> At least one of these exhausts is about 150 miles in length and nearly horizontal, quite different from the exhaust of a volcano or eruption of methane gas.<sup>37</sup> Sometimes twin exhausts are observed, each with multiple explosive puffs in the exhaust. Over 70 incidents have been associated with this site since 1974.<sup>38</sup> Note that the island need not be the site of the actual weapon itself; the



extracted energy arriving at a distant howitzer which fires in the endothermic mode could then be "relay-fired" to Bennett Island by the same howitzer switching into its exothermic mode. Thus the howitzer could act as an energy transmission relay between a distant endothermic target site and a separate distant exothermic exhaust site such as Bennett Island.

(14) Note that scalar beams of great power, travelling through the upper charged layers of the atmosphere, may slightly interact with the ionized air, leaving slightly luminescent wave traces. If one assumes very slowly traveling waves, then wave traces consistent with such an hypothesis may have been observed.<sup>39</sup>

(15) Anomalous so-called "laser blinding" of U.S. satellites over the Soviet Union has apparently occurred on multiple occasions.<sup>40</sup> On one occasion, a satellite was blinded for up to four hours. While non-damaging blinding would be difficult for a ground-based laser to accomplish, it would be simple for a scalar interferometer to accomplish, since the amount of energy deposited upon and within the satellite could be precisely controlled. A possibly related anomalous temporary disabling of two of three power supplies has been demonstrated upon the British satellite Ariel 6 when passing over British Columbia and the Caspian Sea, if the sun is shining.<sup>41</sup>

(16) In the 1960's Curtis detected a previously unknown anomalous weak electromagnetic radiation pattern over the ocean.<sup>42</sup> This is the type of pattern which would have been consistent with the introduction of scalar signals with a small, impure component; i.e., a weak transverse electromagnetic wave residue. Such cruder



implementation would have been expected early-on in the Soviet program.

(17) Finally, authoritative Soviet statements have existed since the 1960's that the Soviet Union possesses a 100% effective ballistic missile defense.<sup>43</sup> Insofar as the West has known, this degree of effectiveness in ABM defense is not possible by presently understood means. However, it may be possible by scalar electromagnetic means, and one of the authors (Bearden) has previously proposed specific mechanisms for effective boost phase, midcourse, and terminal defenses, including shielding against high altitude suppression nuclear bursts, prompt gamma radiation, and infrared radiation and overcoming penetration aids such as maneuvering re-entry vehicles, decoys, and chaff.<sup>44</sup> The extensive open literature pattern of sightings of giant hemispherical "domes of light", small and giant balls of energy, etc. appear to be consistent with these mechanisms. If so, then giant Soviet transmitters and radars have other utilization modes completely different from those presently assumed by Western intelligence analysts and Soviet deployment of effective ABM defenses may have already been completed.

Admittedly the evidence that the incident of 9 April 1984 was a test of a Soviet cold explosion weapon is still inconclusive. However, the basic mechanism for such a cause has been formulated (Bearden), and proprietary laboratory tests have proven the concept by demonstrating the basic endothermic effect and scalar Fourier transformation (Sanchez). Scalar electromagnetics should at least be fully considered in the analysis of the April 9 and related incidents, by geophysicists and military analysts, when known natural



phenomena can be ruled out as a possible cause.

Due to the far-reaching implications of the April 9 cloud incident and other possibly associated incidents if the man-made hypothesis is correct, further scalar electromagnetic experimentation by U.S. scientists is urgently indicated. Replication of our scalar electromagnetics work by other scientists would provide strong evidence that the strategic balance of power is already in grave jeopardy due to Soviet development of powerful strategic scalar electromagnetic weapons.

T. E. Bearden

Ramon Sanchez

Note: One of the authors (Bearden) expresses appreciation for partial support of his work by Mr. Richard J. Reynolds III and by the Association of Distinguished American Scientists.



## Notes and References

1. Daniel A. Walker, Charles S. McCreery, and Fermin J. Oliveira, "Kaitoku Seamount and the Mystery Cloud of 9 April 1984," Science, 227(4684), Feb. 8, 1985, p. 607-611.
2. A simple scalar wave detector, developed by Bedini after concepts by Dea and Fareto, is described in T. E. Bearden, "Toward a New electromagnetics: Part VI: Basic Scalar EM Concepts, a Scalar Wave Detector, and Mass and Inertia Variation," Tesla Book Co., 1580 Magnolia, Millbrae, California 94030 (in publication). The basic principle is the use of a strong magnetic field to partially translate a portion of a longitudinal scalar wave into an ordinary transverse EM wave. A Faraday cage surrounding the magnetic translator grounds out ordinary "transverse" EM waves, while longitudinal EM waves freely transit through and translate. Once translated, an ordinary detector inside the cage detects the resulting transverse wave. For indication of the reverse translation effect using a strong magnetic field, see Yu. D. Zhugzhda, "Magnetogravitational waves in a conducting isothermic atmosphere," Moscow Astronomicheskii Zhugzhda, 56(1), 1979, p. 74-83.
3. Tesla adamantly opposed the Hertz concept of transverse EM waves in vacuum, insisting that such waves were longitudinal, appearing as "electromagnetic sound waves" in the ether. E.g., see Nikola Tesla, "The True Wireless," Electrical Experimenter, May 1919, p. 87. Our own investigations have concluded that Tesla was partially correct. Experiments indicate that a normal EM vacuum wave is longitudinal as Tesla stated, but it possesses an imperfection. It appears to contain circulating electron and nucleon "spin holes" where the wave was torn from the bare electrons and nucleons of the transmitting material conductor. This imperfection allows the electrons and nucleons in the distant detector/receiving antenna to "spin lock" to corresponding spin holes in the wave, and develop E and B fields between mobile Fermi gas electrons and the relatively fixed nucleons. However, appreciable cancellation of the "spin holes" in the launched waves can be readily accomplished. In that case, a nearly pure, longitudinal EM wave -- the new scalar wave -- is launched. This wave is not detectable by normal detectors, and it passes easily through Faraday shields, as verified in experiments by one of the authors (Sanchez). The scalar wave's ability to penetrate into and through natural conductive media such as the earth and the ocean also appears to substantially differ from that of ordinary EM waves, according to experiments by Golden.
4. I.e., in the normal detector the material's nucleons and Fermi gas electrons cannot "spin couple" to the scalar wave. Hence no wave-induced movement of the electrons in the electron gas occurs to provide detection. Another way to view this is to realize that any vector field can be replaced by two scalar fields (E. T. Whittaker, "On the expression of the electromagnetic field due to electrons by means of two scalar potential functions," Proceedings of the London Mathematical Society, 1, 1903, p. 357-372). By extension, any vector gradient wave can be replaced by two coupled scalar waves of unequal



magnitudes except at the zero gradient field points. If we make the two coupled scalar waves of equal amplitude everywhere vis a vis each other, the wave can still exist, but now it is not a detectable ordinary EM wave.

5. Dimensionally, stress and force differ. Thus it seems expedient to differentiate between energy associated with a single non-zero force, and energy associated with a single zero force resultant of ever-present multiple simultaneous non-zero force components. Quantum mechanically, the component electrical force vectors of a zero-vector system can be interpreted to exist and move dynamically "inside an observably zero field," or directly in virtual state itself. In this interpretation, deliberate construction of the dynamic components allows deterministic engineering of the virtual state, something which does not presently exist in quantum mechanics. Conceptually it permits, e.g., the statistical distributions of the probability states propagated by the Schroedinger wave to be deterministically affected. The implications of this interpretation are profound, but beyond the scope of this paper.

6. The accumulation of charge (anenergy) in a large body such as the earth produces a "denser" virtual flux in the vacuum in the vicinity. Spacetime is curved in the vicinity of such an anenergy accumulation, since the vacuum potential varies across the region of the mass and its vicinity. Thus the speed of light in a hard vacuum near the surface of the earth is slightly greater than the speed of light in the vacuum of deep space. This curious phenomenon has been noted for four decades, but essentially ignored. See B. N. Belyaev, "On Random Fluctuations of the Velocity of Light in Vacuum," Azvestiya Vysshikh Uchebnykh Zavedenii, Fizika, 11, Nov. 1980, p. 37-42, translation by Plenum, for discussion of the known variation of the speed of light in vacuum.

7. Y. Aharonov and D. Bohm, "Significance of Electromagnetic Potentials in the Quantum Theory," Physical Review, Second Series, 115(3), Aug. 1, 1959, p. 485-491.

8. For description and details of the incident see Walker et al, op. cit. See also transcription from Japan Airlines flight 036 to Anchorage International Flight Service, 9 April 1984, at 1406 Greenwich mean time, Federal Aviation Administration (FAA) - Alaska Region; Jim Derry, Special Agent, FAA-Alaska Region, interviews with Captain C. H. McDade, Japan Air Lines Flight 036, with Captain Cornelis Vander Berg, KLM Royal Dutch Airlines Flight 868; with First Officer Reint Sol, KLM Royal Dutch Airlines Flight 868, and with Captain Mike Howe, Flying Tiger Lines Flight 078; Anchorage Daily News, 10 April 1984, p. A-1; Anchorage Daily News, 12 April 1984, p. A-1; Honolulu Advertiser, 10 April 1984, p. B-1; Newsweek, 30 April 1984, p. 25; Gregg Ripee, "Mushroom cloud sighted off Japan," Los Angeles Daily News, 11 April 1984, p. 1,8; Ross Gelbspan, "Mystery cloud baffles scientists," Boston Sunday Globe, 13 Jan. 1985, p. 1, 14.

9. E. g., see Robert J. Durant, "An Underwater Explosion -- or



What?", Pursuit, 5(2), April 1972, p. 30-31. On 11 April 1963 -- one day after the Toss of the USS Thresher atomic submarine, the crew of a Boeing 707 jetliner, flying at 31,000 feet over a checkpoint 100 miles from San Juan, Puerto Rico, observed the ocean boiling up in a giant hemispheric mound four or five miles from the path of the jet. The mass of water grew in size and height to approximately 1/3 to 1/2 mile high, turning into a "cauliflower" shape, then fell back in the water. The crew reported no blast wave. The cauliflower was from 1/2 to 1 mile in diameter at its maximum height. This could conceivably have been one of the first operational tests of a Soviet hyperspace howitzer in the endothermic mode -- a little over three years after Khrushchev announced a powerful new "fantastic" Soviet weapon in development. The close proximity to the loss of the Thresher on the previous day is at least interesting, more so since the USS Skylark, surface companion of the Thresher, was experiencing severe and anomalous electromagnetic interference with multiple electronic systems when the sub was lost. So serious was the interference that it required 1 hour and forty minutes to complete the emergency message back to New London that contact with the Thresher had been lost (John Bentley, The Thresher Disaster, Doubleday, Garden City, N. Y., 1975, p. 164). Some of the communications systems experienced temporary failure, but were not disabled, later resuming operation. There exists at least the possibility that scalar beams could have penetrated the water, intersecting the zone in which the Thresher dived. If sufficient electromagnetic interference were introduced inside the Thresher's electrical control systems, this could have caused loss of control, and subsequent sinking to crush depth. At least the known anomalous interference in the area at the exact time of the loss of the sub is highly suspicious, particularly in view of a candidate test of a Soviet scalar howitzer in the endothermic mode one day later off Puerto Rico. The Soviet Union has a well-established history of interfering with and destroying aircraft; for example, for a listing see "Soviet and Warsaw Pact air incidents," Jane's Defence Weekly, p. 58. There is at least the possibility that destruction of the USS Thresher on 10 April 1963 and the anomalous explosion off Puerto Rico on 11 April 1963 represent two back-to-back tests by Khrushchev of his new superweapons, and secret retaliation for his humiliation by Kennedy during the 1962 Cuban Missile Crisis a few months earlier. Such desperate measures may have been necessitated for Khrushchev to recover face before the Communist leaders and retain his leadership position.

10. For details see "Scientists Fail to Solve Vela Mystery," Science, 207, 1 Feb. 1980, p. 504-506. "Satellite Evidence Shows 'Possibility' of Nuclear Test, DOD Says," Aerospace Daily, Oct. 29, 1979, p. 286. "A Flash of Light," Newsweek, Nov. 5, 1979, p. 64-65. "Was It a Nuclear Device?", Newsweek, July 21, 1980, p. 19. "Diverging Views," Washington Roundup, Aviation Week & Space Technology, July 21, 1980, p. 15. Philip J. Klass, "Clandestine Nuclear Test Doubt," Aviation Week & Space Technology, Aug. 11, 1980, p. 67, 69, 71-72. "Debate continues on the Bomb That Wasn't," Science, 209, 1 Aug. 1980, p. 572-573. "Navy Lab Concludes the Vela Saw a Bomb," Science, 209, 29 Aug. 1980, p. 996-997.



11. Since the component vectors of the interfering scalar waves exist in the virtual state of the vacuum charge, then eruption of sudden observable photons constitutes direct eruption of observable energy from the spacetime vacuum. This would be accompanied by eruption of Dirac matter from the filled negative energy states of the Dirac sea.

12. Indeed the mechanisms are the same. Photons, being faster than Dirac electrons, are emitted first, giving the first peak. Then as the Dirac matter emerges, briefly nearly all photons immediately following are absorbed, leading to a sharp trough in the emitted radiation. Then as the absorbed photons are reradiated from the Dirac matter, a second sharp peak occurs. The slight differences between the twin EM pulse peaks from a nuclear explosion and from the scalar interferometry exothermic explosion is due to the presence of additional matter from the bomb structure in the case of the nuclear explosion.

13. Klass, op. cit.

14. Gwynne Roberts, "Witness to a Super Weapon?", The Sunday Times, London, England, Aug. 17, 1980.

15. For an artist's conception, see Aviation Week & Space Technology, July 28, 1980, p. 48. Obviously U.S. military analysts, with no knowledge of scalar interferometry, have not considered the installation as a candidate hyperspatial howitzer.

16. Central Intelligence Agency (CIA) Report, released on 15 Dec. 1978 under the Freedom of Information Act (FOIA).

17. British European Airways flight 831 between Moscow and London. Source is a CIA Report released on 15 Dec. 1978 under the FOIA.

18. For example: F.S. Angus and G. Carling, "Optical Phenomenon: Caribbean Sea; Western North Atlantic," Marine Observer, 40, Jan. 1970, p. 17-18; R. A. Holmes, "Unidentified Phenomenon, off Barbados, West Indies," Marine Observer, 40(229), July 1970, p. 107-108; H. K. Dyer, "Unidentified Phenomenon: Western North Atlantic," Marine Observer, 43, July 1973, p. 114. For a 1961 double concentric hemispheric shape observed in the Indian Ocean, see Marine Observer, 32, 1962, p. 64. For a particularly significant combination of forms, see Marine Observer, "Unidentified Phenomenon," 48, 1978, p. 21-22. Also, on the night of July 26, 1984 the pilot and crew of a Boeing 747 (American carrier) flying from Tokyo to Fairbanks, near the Kuriel Islands, at 47° 5'44" N; 161° 00'05" E, noticed a slowly expanding hemisphere of white light off to their left above the horizon. The shell of light continued to expand over a 10-minute period until ahead of them and to the right. The crew braced for a shock wave which never arrived. Their weather radar saw nothing out of the ordinary. The shell of light had sharp edges and was semi-transparent so that stars became visible through it. (Richard F. Haines, private communication, Sept. 27, 1984). See also Richard



Hall, "Aerial anomalies at sea," The Info Journal, 4(3), May 1975, p. 6-9 for an unusual light phenomenon seen in the Caribbean by the R.M.S. Carmania (British). The phenomenon occurred four times at precise hourly intervals, strongly suggesting an artificial origin. See also F. Shepherd, "Cloud: Strait of Gibraltar," Marine Observer, 51(273), July 1981, p. 107-108 for an incident of associated cloud, arch, and anomalous pressure effects. For another significant airline sighting by Japan Air Lines flights 403 and 421 of a giant, expanding globe of light on June 18, 1982, in the North Pacific, 700 km. east of Kushiro, see the Asahi Evening News, Tokyo, Japan, June 22, 1982.

19. Max Frankel, "Khrushchev Says Soviet Will Cut Forces a Third; Sees 'Fantastic Weapon'", New York Times, Jan. 15, 1960, p. 1.

20. In a major Kremlin speech on June 13, 1985, Leonid I. Brezhnev included a statement that one major concern not covered by existing agreements was "assuming ever greater urgency with each passing day." Calling for a ban on new weapons of mass destruction, the Soviet leader stated: "The level of modern technology is such that a serious danger arises of creating weapons more terrifying than nuclear ones." He stated, "The reason and conscience of humanity dictate the necessity of erecting an insurmountable barrier to the development of such weapons." See Christopher S. Wren, "Brezhnev Calls for Accord against 'Terrifying Arms,'" New York Times, June 14, 1975, p. 1, 11.

21. See Malcolm W. Browne, "Senatorial Group Received by Brezhnev," New York Times, July 3, 1975, p. 2. Brezhnev repeated his proposal to a group of U.S. senators on July 2, stating that the capability to develop more terrible weapons was obvious. He emphasized, however, that he "had no particular weapon in mind." Here he may have been deliberately misleading the U.S. senators, to prevent revealing that the Soviet Union had already developed such weapons, and was horrified at their potential for total destruction. E.g., if massive and rapid scalar explosions occur, the linearity of spacetime -- and the orderly flow of time itself -- may be seriously perturbed throughout the earth and its adjacent space. From a general relativistic viewpoint, such an event might well prove catastrophic for the entire biosphere. Boris N. Ponomarev, a Soviet national party secretary, again raised the same issue to a delegation of visiting U.S. congressmen in the Kremlin on Aug. 11, 1975; see Christopher S. Wren, "Moscow Now Pressing Disarmament," New York Times, Aug. 12, 1975, p. 6. At the United Nations on Sept. 23, 1975, Foreign Minister Andrei A. Gromyko strongly raised the same issue to the General Assembly, warning that science can produce "ominous" new weapons of mass destruction. He urged that all countries, led first by the major powers, should sign an agreement to ban the development of these unspecified new weapons. He even offered a draft, entitled "Agreement on the Prohibition and Manufacture of New Types of Weapons of Mass Annihilation and of New Systems of Such Weapons." The first article specified that these new weapons would be "specified through negotiations on the subject." Because of its fixation on nuclear weapons, the West may have lost its only opportunity to prevent the spread of scalar electromagnetic weapons of power unprecedented even



by nuclear arms.

22. Thomas E. Bearden, "USSR: New beam energy possible?", Defense & Foreign Affairs Daily, 13(111), June 12, 1984, p. 1-2. Cloud signature patterns reported in the article have been repeatedly sighted over multiple areas in the U.S. A series of anomalous "hole in the cloud" patterns, possibly associated with early Soviet weather engineering efforts over the U.S., was widely seen in 1967-68. See Weatherwise, 21(4), Aug. 1968, cover and p. 143; 21(5), Oct. 1968, p. 194-195, 204-205; 21(6), Dec. 1968, p. 238-245. Peculiar stationary blocking patterns have also been observed to occur and influence weather over the U.S., leading to severities such as the winter of 1976-77. See K. K. Tung and R. S. Lindzen, "A theory of stationary long waves, Part 1, A simple theory of blocking; Part 2: Resonant Rossby waves in the presence of realistic vertical shears; Part 3, Quasi-normal modes in a singular waveguide," Monthly Weather Review, 107(6), June 1979, p. 714-774.

23. See Christopher Chant and Ian Hogg, Nuclear War in the 1980's?, Harper & Row, New York, 1983, p. 71.

24. When adjusting the scalar interferometry components of the grid, bursts in the interference and discharges of energy as well as bursts of energy extractions would occur. This leads to the production of anomalous aerial phenomena such as explosions, rumblings, airquakes, etc. In addition, direct Bohm-Aharonov forces may be engendered in groundstructures, shaking buildings and windows, etc. without seismic disturbances. Such anomalous disturbances have been widely noted in the open U.S. press. E.g., particularly see Kenneth F. Bunting and Daniel M. Weintraub, "Mysterious Rumbles Jar Southland," Los Angeles Times, Dec. 8, 1984, CC(11), p.1 10; Let Scarr, "People shook up over mystery shakes," The San Diego Union, Dec. 8, 1984, p. B1, 4. Following this and a Dec. 9 series of anomalous aerial disturbances off the Los Angeles/San Diego coast, a sharp and unexpected weather front appeared, racking the area with high winds on the night of Dec. 12, producing widespread damage and power outages. The newly-formed front moved on to produce significant snowstorms in other areas. (See Ted Thackery, Jr., "Winds Kill Two, Wreak Havoc as They Sweep Through the Southland," Los Angeles Times, Dec. 14, 1984, MF/Part II, p. 1,8; "Even Tucson gets snow in storm that dumps 20 inches," AP release, Los Angeles Herald Examiner, Dec. 14, 1984, p. A-12. Prior to the Dec. 12 anomalous weather front, one of the authors (Bearden) accurately predicted an impending sudden drastic change in the weather in a brief interview over Radio Station KABC, Los Angeles, after the Dec. 8-9 anomalous aerial and ground structure disturbances. During several months prior to the December 1984 Los Angeles incident, anomalous electrical failures and outages had occurred in the San Diego and Southern California area, possibly due to scalar interferometry adjustments in the Woodpecker grid over the area. For other typical incidents possibly associated with adjustment of the interference grid, see "Who boomed? Odd Noise unnerves Ohioans," Journal, Milwaukee, Wisconsin, Dec. 28, 1982; "Tremors shake Miss. Gulf Coast," Times-Picayune, New Orleans, Louisiana, Feb. 27, 1983; Sandra Skowron, "Sonic boom is just Mother



Nature," Beaver Co. Times, Beaver Falls, Penn., Jan 13, 1983; "Booms in Rockland," New York Times, Mar. 1, 1979, Sec. 8, p. 82; "Loud 'boom' unexplained," Star-Beacon, Ashtabula, Ohio, Feb. 21, 1983; Paul Senecton, "The word is now IDENTIFIED," Mail, Hartlepool, England, Feb. 3, 1985: On Jan. 23, 1974 a mysterious explosion over North Wales rocked a 60-mile radius area. Associated anomalous light phenomena were also seen. Hundreds of anomalous booms, aerial rumbles, and aerial explosions, many accompanied by flashes or anomalous shaking of ground structures, buildings, windows, etc., have occurred over the U.S. and other Western nations in the 60's, 70's, and 80's.

On occasion, an aircraft at the proper altitude and position could conceivably experience interference in its electrical systems and in its engine combustion processes due to exothermic kindling or endothermic extraction of electromagnetic energy. The combustion processes of aircraft engines produce highly ionized gases in very nonlinear conditions. These can act as strong dephasers and decouplers in a scalar interference zone. Exothermic interference would have little effect on combustion, but strong endothermic interference could conceivably result in engine flameout. Anomalous simultaneous failure of jet and propeller-driven aircraft engines could sometimes occur. For high altitude grids, this could result in engine flameouts, but restart and recovery after unusual loss of altitude resulted in the aircraft exiting the scalar interference zone. Several candidate incidents over and near the U.S. exist, particularly where power failures were experienced by multiple aircraft. The more usual exothermic case, however, if substantial could result in anomalous loss of control of the aircraft. For a recent candidate incident, see "Jetliner drops 32,000 feet; 400 aboard; 50 are injured," Associated Press release, Huntsville Times, Feb. 20, 1975, p. 1 and "China Airlines Pilot Denies Cockpit Error," Associated Press release, Huntsville Times, Feb. 21, 1985, p. A-9. Certain signatures may occur. Different instruments may sharply contradict each other, since their activation and inactivation is no longer a simple function. The pilot's instrument panel, for example, may indicate failure of the control system, when actually it has not failed, and the flight recorder may record that the control system is still operating. In such case, the pilot may take proper action based on his own instrumental readings, yet these actions may be contraindicated for the actual status of the aircraft, resulting in opposing pilot/autopilot actions. Tentative indications of this candidate incident apparently show such anomalous signatures.

25. Robert Beck, private communication.

26. Frank Golden, private communication.

27. Bearden, "USSR: New Beam Energy Possible?", Defense & Foreign Affairs Daily, 13(111), June 12, 1984, p. 1-2. For sketches of the patterns and typical incidents, see T. E. Bearden, "Star Wars Now! The Bohm-Aharonov Effect, Scalar Interferometry, and Soviet Weaponization," Tesla Book Co., Millbrae, California, 1984, p. 19-22.

28. By one of the authors (Bearden).



29. George N. Chatham, "East Coast Aerial Explosions," Science Policy Research Division, Library of Congress, Dec. 30, 1977. A variety of news media releases also contain details. For example, see "High-altitude explosions leave experts puzzled," The Salt Lake Tribune, Dec. 23, 1977.

30. In the standard artillery high burst registration, triangulation to the flash of an aerial burst fired by howitzers is used to calculate corrective adjustments to the standard firing table settings. This corrects for weather, temperature, wind, air density variations, etc. Once zeroed in, the howitzers can fire accurately over a large area underneath the registration point.

31. Details of the effects on U.S. Embassy personnel, possibly associated with the microwave radiation, are contained in Paul Brodeur, The Zapping of America, W. W. Norton & Co., New York, 1977, passim. A great number of related releases by the open news media also exist. For example, see Robert C. Toth, "Radiation Devices Bug U.S. Embassy," Huntsville Times, reprinted from the Los Angeles Times, Feb. 8, 1976; "U.S. Screening out Soviet 'Listening Rays'," United Press International release, Washington D.C. Star, Feb. 11, 1976; Norman R. Beebe, "Nixon Exposed to Radiation in Russia?", Associated Press release, Huntsville Times, Apr. 30, 1976; Barton Reppert, "U.S. Scientists Puzzled Over Embassy Radiation Effect," Associated Press release, Huntsville Times, May 28, 1976; Barton Reppert, "Radiation Entering Embassy in Moscow through Phone Line," Associated Press Release, Huntsville Times, May 28, 1976.

32. Brodeur, op. cit.

33. Vlai P. Kaznachev, "Information function of ultraweak light flows in biological systems," Problems in Biophysics, Novosibirsk, 1967, p. 7-18. Kaznachev et al., "Conditions necessary for appearance of distant intercellular interactions after UV-radiation," Bulletin Experimentalnoy Biologii i Meditsiny, (5), 1979, p. 468-471; "Distant intercellular interactions in a system of two cultures connected by optical contact," Ultraweak Luminescence in Biology, Moscow, 1972, p. 224-227; "Distant intercellular interactions caused by UV-radiation," Photobiology of a Living Cell, Leningrad, 1979, p. 221-223; "Studies on the biological role of electromagnetic emission as a factor of adaptive behavior of cells under conditions of latitude changes," Abstracts of the second all-union conference devoted to the problem of human adaptation to different geographical, climatic, and labor conditions, Novosibirsk, 1977, p. 101-104; Vlai P. Kaznachev, S. P. Shurin and L.P. Mikjhailova, "Distant intercellular interactions in a system of two tissue cultures," Official Bulletin of the committee on inventions and discoveries affiliated to the council of ministers of the USSR, Discovery no. 122 (19), 1973, p. 3, also printed in Psychoenergetic Systems, 1(3), Mar. 1976, p. 141-142; "Apparent Information Transfer Between Two Groups of Cells," Psychoenergetic Systems, 1(1), Dec. 1974, p. 37.



34. Lysenko was addressing the 1982 World Futures Society Conference, Washington, D.C.

35. "Navy sabotages traffic lights, TV sets," United Press International, PM cycle, Jan. 11, 1985; "Power blackout blamed on anti-radar particles," United Press International, AM cycle, Jan. 11, 1985; "Power Disrupted Briefly After Navy Plane Drops Metallic Strands," Associated Press, AM cycle, Jan. 16, 1985.

36. "Explosive Events Seen on Soviet Island," Aviation Week & Space Technology, Sept. 26, 1983, p. 31. NOAA-6 and NOAA-7 weather satellite photographs of massive smoke plumes, one of them 150 miles long and nearly horizontal, are shown.

37. Loc. cit.

38. Letter John M. Miller, Geophysical Institute, University of Alaska, Jan. 4, 1985 with attachment, "Bennett Island plume cases recently found." Satellite photos showing actual circular breaking of arctic ice have also been taken. See Sam Bishop, "UA photos show Soviets break ice for missiles," Fairbanks Daily News-Miner, Dec. 15, 1984, p. 1,3; Craig Covault, "Soviet Ability to Fire through Ice Creates New SLBM Basing Mode," Aviation Week & Space Technology, Dec. 10, 1984, p. 16-17.

39. E.g., Alan W. Peterson, "Airglow Events Visible to the Naked Eye," Applied Optics, 18, 1979, p. 3390.

40. Philip J. Klass, "Anti-Satellite Laser Use Suspected," Aviation Week & Space Technology, Dec. 8, 1975, p. 12-13.

41. Joe Schwartz, Nature, 280, July 12, 1979, p. 95.

42. George D. Curtis, "An electromagnetic radiation pattern over the ocean," Undersea Technology, 5(8), Aug. 1964, p. 29-30, 40.

43. In 1973 Leonid I. Brezhnev, in a secret meeting in Prague with European communist leaders, stated that "we are achieving with detente what our predecessors have been unable to achieve with the mailed fist... By 1985 our power will be so irresistible that we can do what we wish anywhere on the globe."

Strangely, a portion of a book by Marshal Grechko was deleted from its English translation at the specific request of the Soviet Union to the U.S. State Department. The passage stated: "Of particular importance is basic research aimed at discovering still unknown attributes of matter, phenomena, and the laws of nature, and developing new methods for their study and use to reinforce the state's defense capabilities."

Interactions which occurred between Khrushchev and renowned physicist and Nobelian P. Kapitsa are also of interest. Khrushchev desired absolute defense of the Soviet Union so that the Soviets might be able to launch any action desired without risk or serious concern. Kapitsa informed the Soviet leader that, if a means of total neutralization of foreign missiles was to be found, it could only come from a group of new principles in physics which was called



"energetics." The term "energetics," of course, was contracted from "psychoenergetics," and is essentially the expanded physics/electromagnetics that we have dubbed scalar electromagnetics.

The most definitive Soviet book on military strategy is titled Military Strategy. There are three editions, the latest in 1968. In that edition, a discussion of all the exotic weapons normally proposed for defense against strategic ballistic missiles -- such as particle beams, high energy lasers, exotic nuclear warheads, plasma weapons, antigravitational weapons, etc. -- are discussed and discounted by implication. The statement is made several times that 100% defense against missiles and aircraft is possible. A statement is also made that it is interesting to note that this capability (a solution to the strategic missile defense problem) has been achieved by the Soviet Union, but not by the West. In the same edition, a previous definition of antimissile defense obviously consisting of radars, computers, and interceptor missiles is deleted.

The Soviets also recognize the great importance of technical surprise: "The experience of war shows that warring sides quite often have tried to employ new types of weapons to this end to achieve surprise, which are a surprise for the enemy or are little known to him. Each side secretly develops new means of warfare in order to employ them unexpectedly. History knows many examples how the employment of a new weapon initially gave considerable success because the enemy, caught unawares and not knowing the combat capabilities of this weapon, was for some time incapable of effective counteraction... The mass introduction of new weapons into an army usually cannot remain secret for long for [sic: from] the other side. -- New means of warfare, and in mass numbers, are impossible to create often and quickly. In this regard, the sides have begun to take other paths concerning the attainment of surprise along with searches for new weapons and their sophistication." V. Ye. Savkin, The Basic Principles of Operational Art and Tactics, Moscow, 1972, U.S. Air Force translation, U.S. Government Printing Office, Washington, D.C. 20402

44. Bearden, "Star Wars Now!", Tesla Book Co., 1984; "Solutions to Tesla's Secrets and the Soviet Tesla Weapons," Tesla Book Co., 1981. See also Stefan T. Possony, "The Tesla Connection," Defense & Foreign Affairs, Aug. 1984, p. 12-14, 27.

45. It is fairly straightforward to modify an ordinary pencil beam radar to produce scalar wave beams and geometrical scalar Fourier expansion forms. Even older radars with antiaircraft gun sites and older surface-to-air missile sites might exhibit startling capabilities in a scalar mode.